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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/686,878

**Applicant(s)**

HSU ET AL.

**Examiner**

CARLTON V. JOHNSON

**Art Unit**

2436

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-8, 10-22 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-8, 10-22 and 24-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is responding to application amendments filed on **8-26-2008**.
2. Claims **1, 3 - 8, 10 - 22, 24 - 30** are pending. Claims **1, 10, 13, 17, 24, 28** have been amended. Claims **2, 9, 23** have been cancelled. Claims **1, 10, 13, 17, 24, 28** are independent. This application was filed on **10-16-2003**.

### ***Response to Arguments***

3. Applicant's arguments filed 8-26-2008 have been fully considered but were not persuasive.

3.1 Applicant argues two prior art references. (see Remarks Page 8)

One of the indicated references (5,178,170 and 6,925,557) discloses a specific reset signal and a special sequence utilized not to reset memory. The setting of this particular signal is continued until the reset is completed. It appears the Applicant should have been aware and should have mentioned in Applicant's invention such a specific command. It appears the Applicant should have realized that it was obvious that a specific command was needed in order not to erase volatile memory during a reboot procedure and should have indicated the same in Applicant's invention.

The Examiner is unclear why a reboot procedure is necessary in order to complete the indicated steps that Applicant's invention requires. Applicant's invention starts operating at the initiation of an interrupt/exception (i.e. possibly detected error) by a computer system. Processing this interrupt/exception, Applicant's invention loads a

special program (a data save kernel) which saves the contents of volatile memory. Now, after the data save operation completion, the computer system can continue processing operations which may result in a system reboot. Applicant's invention appears to be the data save of volatile memory using the data save kernel software.

3.2 Applicant argues concerning the effective date of Moiroux prior art. (see Remarks Page 9)

Applicant mentions an IBM document dated 22 October 2002 that invalids the effective date of the Moiroux prior art reference. Examiner has seen no indication of an IBM document added to the prosecution list of documents. The Moiroux prior art is still a valid prior art reference and the grounds of rejection including the Moiroux prior art stands.

3.3 In order to reiterate Examiner's position, previous responses to remarks have been included:

Tallam discloses a computer boot loader that load an OS under normal procedures and load a recovery OS (data save, reduced kernel) under system crash conditions. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

Moiroux discloses the save of system data in the event of a system crash or a system shutdown due to an incorrect condition. (see Moiroux col. 1, lines 55-60: save

system memory context to non-volatile storage; indication system shutdown correctly or incorrectly (crash, abnormal condition))

Applicant's principal argument is the capability to reboot a computer system and place a special data save kernel (core executable) into execution at reboot completion and save the contents of volatile memory. This particular sequence of events raises an enablement issue and requires a USC 112 rejection. Applicant uses the term "*reboot*" multiple times within the specification with no definition of the term. Therefore, the generic definition of this particular term, "reboot", will be utilized.

The reboot of a computer system can be performed utilizing a hard boot (with power-off and power-on sequence) or a soft boot (with no power-off and power-on sequence). Applicant's specification does not disclose what type of reboot is implemented as part of the claimed invention. After a review of definitions for the term "reboot" it was found that a power-off and power-on sequence in most situations can be part of a reboot procedure. If a reboot procedure includes a power-off and power-on sequence, then volatile memory is erased and there is no recoverable information for the data save kernel (executable) to save. Rebooting the processor clears the currently executing instruction sequence from the designated executing program (application executing under the control of an operational (executing) OS). And, the reboot procedure reloads a new instruction sequence (i.e. the data save kernel) for the processor to initiate executing instructions.

In addition, as part of the reboot procedure, volatile memory is erased when power is no longer supplied (during a power-off power-on sequence, if one is completed as

part of the reboot procedure). This leads to the enablement problem with Applicant's invention. The invention cannot be implemented as claimed. If applicant feels that there is no enablement problem, please indicate the citations that prove a power-off and power-on sequence is definitely not completed as part of the reboot procedure for confirmation.

Prior art references disclose the save of volatile memory in the event of an abnormal condition (i.e. power failure, system crash). Prior art references discloses the reboot of a computer system after an abnormal condition (system crash).

Reboot Definitions:

With power-off and power-on sequence:

(<http://www.thefreedictionary.com/reboot>)

(<http://www.webopedia.com/TERM/R/reboot.html>)

(<http://www.allwords.com/word-reboot.html>)

([http://searchsmb.techtarget.com/sDefinition/0,,sid44\\_gci947403,00.html](http://searchsmb.techtarget.com/sDefinition/0,,sid44_gci947403,00.html))

(<http://www.yourdictionary.com/ahd/r/r0076750.html>)

Without no power-off and power-on sequence:

(<http://www.scala.com/definition/reboot.html>)

The majority or almost all definitions of the term "*reboot*" indicate a power-off and power-on sequence as a possible step in the reboot procedure. The general consensus appears to be that a reboot can involve a power-off and power-on sequence. This sequence is not excluded by the specification and the original claims. Therefore, this disclosure renders the term "reboot" in the specification indefinite. If applicant feels

that there is no indefinite problem with term "reboot", please indicate the citations that state a definition for the term "reboot" for confirmation.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims **1, 10, 13, 17, 24, 28** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For Claims **1, 10, 13, 17, 24, 28**, there is no disclosure for the amended claim limitation: "wherein the reboot occurs without a loss of data within the volatile memory" in the specification and the original claims. The data save operation is performed to save and prevent a loss of data in volatile memory. There is no disclosure that the reboot procedure must be completed without a loss of data in volatile memory.

The previous rejection for Claims **1, 10, 13, 17, 24, 28** will be maintained. The reboot of a computer system can be performed utilizing a hard boot (with a power-off and power-on sequence) or a soft boot (without a power-off and power-on sequence). Applicant's specification does not disclose what type of reboot is implemented for the

claimed invention. After a review of definitions for the term "reboot", it was found that a power-off and power-on sequence can be performed as part of a reboot procedure. If a reboot procedure includes a power-off and power-on sequence, then volatile memory is erased and there is no recoverable information for the data save kernel to save for placement onto non-volatile storage.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims **1, 10, 13, 17, 24, 28** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The reboot of a computer system can be performed utilizing a hard boot (with a power-off and power-on sequence) or a soft boot (with no power-off and power-on sequence). Applicant's specification or original claims do not disclose what type of reboot or definition of the term reboot implemented for the claimed invention. The rejection for Claims **1, 10, 13, 17, 24, 28** will be maintained.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made



to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims **1, 3 - 7, 10, 11, 13 - 21, 24 - 30** are rejected under 35 U.S.C. 103(a) as being anticipated by **Moiroux et al.** (US Patent No. **7,231,547**) in view of **Tallam** (US Patent No. **6,948,099**).

**With Regards to Claim 1**, Moiroux discloses an apparatus for rapidly, deterministically transferring data, the apparatus comprising:

- a) a processor configured to process data; (see Moiroux col. 3, lines 43-44:  
processor)
- b) a volatile memory configured to store the data; (see Moiroux col. 3, lines 43-46:  
RAM (volatile memory))
- d) the data transfer kernel configured to support a data save operation configured to save data in the volatile memory to a storage device. (see Moiroux col. 1, lines 55-60: method step: save current system memory context to non-volatile storage for entering a state (shutdown correctly or incorrectly); col. 2, lines 8-11: provide a back-up mechanism)

Moiroux discloses wherein a boot control module configured to boot the processor with a standard operating kernel under a normal operating system. (see Moiroux col. 3, line 67 - col. 4, line 4: OS conventionally loaded from a predetermined place on a HDD (standard OS load)) And, Moiroux discloses wherein a data transfer kernel. (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile memory (data save kernel)) Moiroux does not specifically disclose to

reboot the processor.

However, Tallam discloses:

- c) to reboot the processor under an abnormal operating condition that threatens a loss of data in the volatile memory, wherein the reboot occurs without a loss of data within the volatile memory. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions: no disclosure for limitation: reboot occurs without a loss of data within the volatile memory)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to reboot the processor under an abnormal operating condition that threatens a loss of data in the volatile memory as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50: " ... *Thus, there is a continuing need for better ways to re-load an operating system due to operating system corruption or the availability of updates. ...* ")

**With Regards to Claim 3,** Moiroux discloses the apparatus of claim 1, wherein the data save operation is selected from the group consisting of a storage configuration operation, a transfer process loading operation, a data transfer operation, and a system shutdown operation. (see Moiroux col. 1, lines 55-60: save operation (data transfer

operation))

**With Regards to Claims 4, 11,** Moiroux discloses the apparatus of claims 3, 10, wherein the data transfer kernel is configured to support the data save operation. (see Moiroux col. 1, lines 55-60: save operation (data transfer operation)) (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting data save operation. However, Tallam discloses wherein exclusively supporting data save operation. (see Tallam col. 3, lines 33-36: minimal kernel)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to exclusively supporting data save operation as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

**With Regards to Claim 5,** Moiroux discloses the apparatus of claim 1, further comprising a memory module comprising data bits for marking data to be saved during the data save operation. (see Moiroux col. 3, lines 42-46; col. 3, lines 49-56: RAM image saved during save operation; device register values are transferred to form part of RAM image)

**With Regards to Claim 6,** Moiroux discloses the apparatus of claim 5, wherein the

standard operating kernel is further configured to mark data to be saved during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image RAM image configured to save OS))

**With Regards to Claims 7, 21**, Moiroux discloses the apparatus, system of claims 1, 17, wherein the data transfer kernel is configured to configure a storage device for specialized data save operations. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

**With Regards to Claim 10**, Moiroux discloses an apparatus for rapidly, deterministically transferring data to a storage device, the apparatus comprising:

- a) a storage device configured to store data; (see Moiroux col. 4, lines 54-63: save system memory context to HDD (non-volatile memory))
- b) a data transfer kernel configured to support data saving operations; (see Moiroux col. 1, lines 55-60: save operation (data transfer operation))

Moiroux discloses wherein a computer in communication with the storage device, the computer configured to load the data transfer kernel and the data transfer kernel configured to support a data save operation configured to save data in the volatile memory to the storage device. (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile memory)

However, Tallam discloses:

- c) a reboot procedure in response to an abnormal operating condition that threatens the loss of data in a volatile memory, wherein the reboot occurs without a loss of data within the volatile memory; (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions; no disclosure for limitation: reboot occurs without a loss of data within the volatile memory))

It would have been obvious to one of ordinary skill in the art to modify Moiroux for a reboot procedure in response to an abnormal operating condition that threatens the loss of data in a volatile memory as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

**With Regards to Claim 13**, Moiroux discloses an apparatus for rapidly, deterministically saving data, the apparatus comprising:

- a) means for saving data in a non-volatile memory; (see Moiroux col. 1, lines 55-60: save operation (data transfer operation))
- b) means for detecting a data save condition comprising an abnormal operating condition that threatens the loss of data in a volatile memory; (see Moiroux col. 1, lines 55-60: save data in preparation for entering a state (state indication: shutdown correctly or incorrectly))

Moiroux discloses means for a processor with a data transfer kernel in response to the abnormal operating condition, the data transfer kernel without a loss of data within the volatile memory configured to save data to the means for saving data (see Moiroux col. 1, lines 55-60: save current system memory context to non-volatile storage; no disclosure for limitation: reboot occurs without a loss of data within the volatile memory)

However, Tallam discloses:

- c) means for booting a processor with a data transfer kernel in response to the abnormal operating condition. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for booting a processor with a data transfer kernel in response to the abnormal operating condition as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

**With Regards to Claim 14**, Moiroux discloses the apparatus of claim 13, further comprising means for configuring the means for saving data for data save operations. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices

into the RAM image; RAM image configured to save OS))

**With Regards to Claim 15**, Moiroux discloses the apparatus of claim 13, further comprising means for booting a standard operating kernel for normal operation. (see Moiroux col. 3, line 67 - col. 4, line 4: OS is conventionally loaded from a predetermined place on a HDD)

**With Regards to Claims 16, 27, 29**, Moiroux discloses the apparatus, system, computer readable storage medium of claims 13, 24, 28, wherein comprising marking data to be saved during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS))

**With Regards to Claim 17**, Moiroux discloses a system for rapidly, deterministically saving data to a storage device, the system comprising:

- a) a processor configured to process data; (see Moiroux col. 3, lines 43-44:  
processor)
- b) a memory configured to provide volatile storage for the data; (see Moiroux col. 3, lines 43-46: RAM (volatile memory))
- c) a storage device configured to provide non-volatile storage for the data; (see Moiroux col. 4, lines 54-64: system memory context information stored on HDD (non-volatile storage))

Moiroux discloses wherein a boot control module configured to boot the processor module with a standard operating kernel under a normal operating condition (see Moiroux col. 1, line 67 - col. 2, line 4: OS conventionally loaded (normal boot) from a predetermined place on a HDD) and to use a data transfer kernel under an abnormal operating condition that threatens the loss of data in the memory, wherein the reboot occurs without a loss of data within the volatile memory; the data transfer kernel configured to support a data save operation configured to save data in the memory to the storage device. (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage; no disclosure for limitation: reboot occurs without a loss of data within the volatile memory) Moiroux does not specifically disclose a boot control module configured to boot the processor module and to reboot the processor.

However, Tallam discloses:

- d) a boot control module configured to boot the processor module and to reboot the processor. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux for a boot control module configured to boot the processor module and to reboot the processor as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an



operating system due to operating system corruption or the availability of updates.

(see Tallam col. 1, lines 48-50)

**With Regards to Claim 18**, Moiroux discloses the system of claim 17, wherein the standard operating kernel is configured to mark data in the memory to be saved by the data transfer kernel during a data save operation. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM image; RAM image configured to save OS)

**With Regards to Claims 19, 30**, Moiroux discloses the system, computer readable storage medium of claims 17, 28, wherein the data transfer kernel is configured to support devices operations and processes required to save data. (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting devices operations and processes required to save data. However, Tallam discloses wherein configured to exclusively support devices operations and processes required to save data. (see Tallam col. 3, lines 33-36: kernel with minimal software (data transfer only))

It would have been obvious to one of ordinary skill in the art to modify Moiroux to be configured to exclusively support devices operations and processes required to save data as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1,

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lines 48-50)

**With Regards to Claim 20**, Moiroux discloses the apparatus of claim 1, wherein the data transfer kernel is configured to support a data save operation. (see Moiroux col. 1, lines 55-60: data save operation; save system memory context)

**With Regards to Claim 24**, Moiroux discloses a method for rapidly, deterministically saving data, the method comprising:

- a) detecting a data save condition comprising that threatens the loss of data in a volatile memory; (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage; indication system has shutdown correctly or incorrectly)

Moiroux discloses wherein a data transfer kernel configured to support a data save operation configured to save the data in the volatile memory to a non-volatile storage device, wherein the reboot occurs without a loss of data within the volatile memory. (see Moiroux col. 1, lines 55-60: save system memory context to non-volatile storage; no disclosure for limitation: reboot occurs without a loss of data within the volatile memory) Moiroux does not specifically disclose rebooting a processor module with a kernel.

However, Tallam discloses:

- b) rebooting a processor module with a kernel. (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is

necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to rebooting a processor module with a kernel as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

**With Regards to Claim 25**, Moiroux discloses the method of claim 24, further comprising supporting devices, operations, and conducting processes required to save data to a storage device. (see Moiroux col. 1, lines 55-60: data save of system memory context) Moiroux does not specifically disclose exclusively supporting to save data. However, Tallam discloses wherein exclusively supporting save data to a storage device. (see Tallam col. 3, lines 33-36: minimal kernel)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to exclusively supporting save data to a storage device as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

**With Regards to Claim 26**, Moiroux discloses the method of claim 24, further comprising configuring the non-volatile storage device to receive data. (see Moiroux col. 3, lines 49-56: device register values are transferred from the devices into the RAM

image; RAM image configured to save OS))

**With Regards to Claim 28**, Moiroux discloses a computer readable storage medium comprising computer readable program code for rapidly, deterministically saving data, the program code configured to:

- b) transfer the data with the data save operation from the memory module to a non-volatile storage device without a loss of data within the volatile memory. (see Moiroux col. 1, lines 55-60: save system context (OS) to non-volatile storage medium)

Moiroux discloses wherein a data transfer kernel configured to support a data save operation and in response to an abnormal operating condition that threatens the loss of data in a volatile memory module comprising volatile memory. (see Moiroux col. 1, lines 55-60: save current system memory context) Moiroux does not specifically disclose boot a processor module in response to an abnormal operating condition that threatens the loss of data in a volatile memory module.

However, Tallam discloses:

- a) boot a processor module in response to an abnormal operating condition that threatens the loss of data in a volatile memory module; (see Tallam col. 5, lines 5-10: boot loader (boot control module) for loading the OS; col. 3, lines 48-49: col. 4, lines 13-17: OS rebooted; col. 3, lines 33-36: kernel reduced to only code which is necessary to implement required functions)

It would have been obvious to one of ordinary skill in the art to modify Moiroux to

boot a processor module in response to an abnormal operating condition that threatens the loss of data in a volatile memory module as taught by Tallam. One of ordinary skill in the art would have been motivated to employ the teachings of Tallam in order for a better ways to re-load an operating system due to operating system corruption or the availability of updates. (see Tallam col. 1, lines 48-50)

10. Claims **8, 12, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Moiroux-Tallam** and further in view of **Neuman et al.** (US PGPUb No. **20030217299**).

**With Regards to Claims 8, 12, 22**, Moiroux discloses the apparatus, system of claims 1, 10, 17, wherein the data transfer kernel. (see Moiroux col. 1, lines 55-60: saving the current system context (OS) to non-volatile memory) Moiroux does not specifically disclose wherein configured to conduct a power down procedure. However, Neuman discloses wherein configured to conduct a power down procedure. (see Neuman paragraph [0030], lines 1-5: power state management; paragraph [0003], lines 6-13; paragraph [0055], lines 1-7; paragraph [0057], lines 1-8: power down state (i.e. power down procedure))

It would have been obvious to one of ordinary skill in the art to modify Moiroux to enable a power down procedure as taught by Neuman. One of ordinary skill in the art would have been motivated to employ the teachings of Neuman in order to enable a reduction in the amount of data required to save system context for a recovery

operation, and to enable a relatively fast wake-up procedure from a sleep state. (see Neuman paragraph [0015], lines 1-4: “ ... *Advantageously, embodiments of the present invention enable a power management system to be realised in which the amount of data that needs to be saved to preserve a system context is reduced. ...*”; paragraph [0017], lines 1-3: “ ... *Furthermore, embodiments allow, in the absence of a power failure, a relatively fast wake-up time from a sleep state. ...* ”)

### **Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlton V. Johnson whose telephone number is 571-270-1032. The examiner can normally be reached on Monday thru Friday , 8:00 - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Carl Colin/  
Primary Examiner, Art Unit 2436  
12/1/2008

Carlton V. Johnson  
Examiner  
Art Unit 2436

CVJ  
November 24, 2008